

Tech Tip 10

Component Selections for Optimal Dispensing of Epoxies

What >

Proper Dispensing Tips

Why >

Selecting the correct syringe (barrel), tip, piston & adapter is crucial for optimal dispensing.



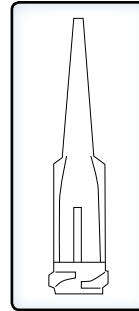
Tip Selection

(Other than straight-walled needle type)

Tapered tips:

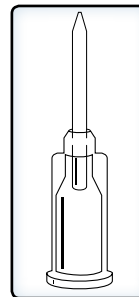
- Available as small as 27 gauge (200um).

- **Highly recommended for filled systems as pressures are significantly reduced**



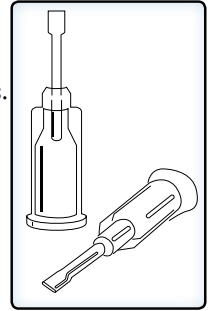
Chamfered tips:

- Wall thickness of the tip is reduced at the end. Reduces cling of the fluid to the end of the tip for enhanced microdot applications.



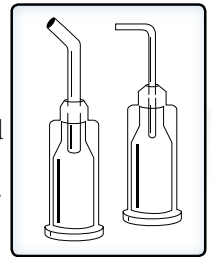
Oval tips:

- Often used for dispensing ribbons.
- Can create uneven flow resulting in air bubbles or voids.



Angled Tips:

- Often used to dispense into difficult to reach areas.
- Not recommended unless absolutely necessary as longer lengths and bend may reduce flow and require higher pressures which can be problematic for filled systems.



Color Coding For Tips Sizes

Color	Gauge	Inner Diameter		Outer Diameter	
		mm	inch	mm	inch
Olive	14	1.54	.060	1.83	.072
Amber	15	1.36	.053	1.65	.065
Grey	16	1.19	.047	n/a	n/a
Green	18	0.84	.033	1.27	.050
Pink	20	0.61	.024	0.91	.036
Purple	21	0.51	.020	0.82	.032
Blue	22	0.41	.016	0.72	.028
Orange	23	0.33	.013	0.65	.025
Red	25	0.25	.010	0.52	.020
Clear	27	0.20	.008	0.42	.016
Lavender	30	0.15	.006	0.31	.012
Yellow	32	0.10	.004	0.24	.009

Tip Diameter:

Rule of thumb: dispensed dot size = 2.5 X inner diameter of the tip.



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Other Considerations

Pistons:

(Colors may vary with individual manufactures.)

- Self wiping (White): good for seeing level of adhesive left in the syringe, but may jam and cause inconsistent pressures



- Free floating (Orange): best for consistent pressures. However, may not be possible to see level of remaining fluid in syringe as walls may be coated with residue.



- Partial wiping (Tan): Good initial piston choice. Useful for many systems.



Fill Level:

- Recommended syringe fill level is no more than **two-thirds full** in order to obtain most consistent pressure over the course of the dispense.



Dispenser Adapter:

- For the most uniform dispensing, all pistons and adapter should be matched to your barrel of choice. Failure to do this will result in improper dispensing.



Dispensing Pressure:

- Use lowest stable pressures possible.
- High pressures (>20psi) can cause packing, agglomerations and excess shear especially in filled systems.

For other useful tips, please visit epotek.com and click our technical info tab.

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